

## METHOD AND APPARATUS FOR DETECTION OF MICROSCOPIC PATHOGENS

### ABSTRACT OF THE DISCLOSURE

5           Detection apparatus for use in the detection of the presence of a  
selected pathogen in a sample are disclosed. Such apparatus include: a substrate  
with a detection region on a surface thereof, the detection region having  
microstructures including grooves formed therein that will align liquid crystal  
material in contact therewith, the width and depth of the grooves being in the range  
10 of 10  $\mu\text{m}$  or less; a blocking layer on the surface of the detection region of the  
substrate that does not disrupt the alignment of liquid crystal material in contact  
therewith, the blocking layer blocking nonspecific adsorption of pathogens to the  
surface; and a binding agent on the surface of the detection region of the substrate,  
the binding agent specifically binding the selected pathogen.